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A New Species of *Orchesella* from Manitoba, Canada (Collembola: Entomobryidae)

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Several months ago I received six microscope slides containing seven specimens of *Orchesella* collected at Fort Whyte, Manitoba, Canada. The specimens were escorted by a letter from Dr. Kenneth Christiansen, Department of Biology, Grinnell College, Iowa, who stated that they were unlike any member of the genus from North America. A detailed study indicated that the specimens belong to the new species described below. The holotype and two paratypes are deposited in the Museum of Comparative Zoology, Cambridge, Massachusetts; two paratypes are in Dr. Christiansen's collection, and the remaining two paratypes are in my collection.

The system of nomenclature used for head macrochaetotaxy was described by Mari Mutt (1979). The system for the macrochaetotaxy of the second and third abdominal segments follows the terminology proposed by Christiansen and Tucker (1977; see also Christiansen and Bellinger, 1980) for the third segment, and which I have modified only slightly to use it also for the second abdominal segment (Mari Mutt, 1984).

Orchesella manitobae Mari Mutt, NEW SPECIES
(Figs. 1–6)

Length to 1.8 mm ($\bar{x} = 1.56$ mm, $n = 7$). Antennae 3.9–4.4× length of head and 0.74–0.82× length of head plus body. Antennal segments 1 to 4 (Ant. 1–4) with violet pigment restricted mainly to sides and apices, segments 5 and 6 evenly pigmented. Head with median V-shaped band and sometimes a rounded patch anterior to this band. Pigment also laterally behind eye patches, around antennal bases, and on an intense spot between the bases of the antennae. Body evenly covered by light violet pigment (Fig. 1) except for a clear median streak on Th. 2 and Th. 3 (not visible in the photograph). Legs lightly but evenly pigmented or pigment restricted to coxae. Collophore pigmented distally, furcula without pigment.

Apex of Ant. 6 with a 3-pointed pin seta and without papilla or protruding structures. Anterior head macrochaetotaxy (Fig. 5) follows formula: An = 4–5, A = 7, M = 4, S = 10. Four macrochaetae along midline of head. Prelabral setae rarely bifurcated. Labral papillae (Fig. 6) with pointed tips. Differentiated seta of outer labial papilla well developed but not reaching apex of its papilla (Figs. 3, 4), latter with 2 anterior setae and a single posterior seta external to the differentiated seta. Setae of anterior labial row smooth and subequal in length. Posterior labial row internal to seta E with 4–7 setae per side, all ciliated. Setae E, L_1 and L_2 ciliated. Macrochaetal formula for second abdominal segment (Abd. 2): IA =

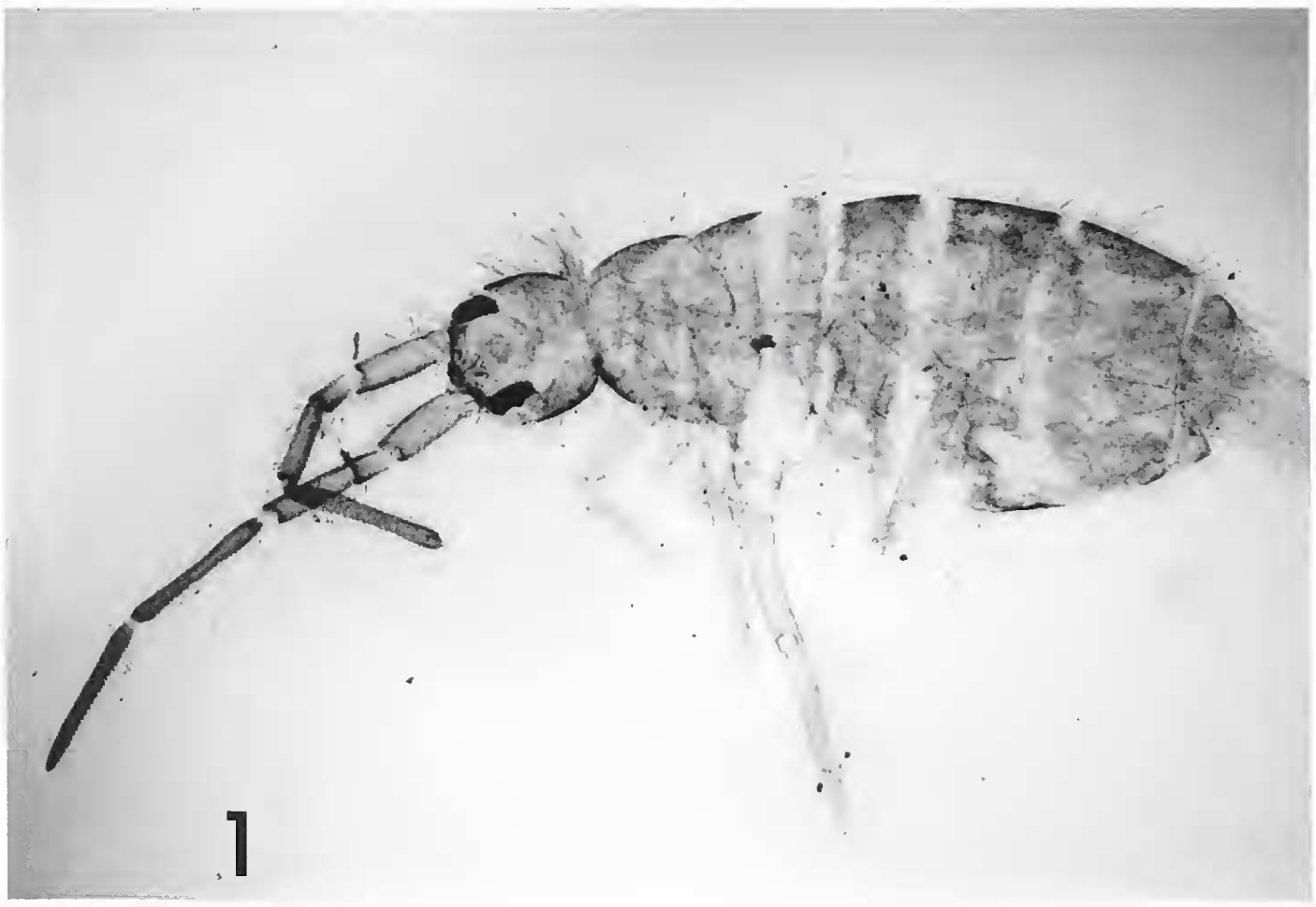


Figure 1. *O. manitobae.* Holotype, the specimen measures 1.8 mm.

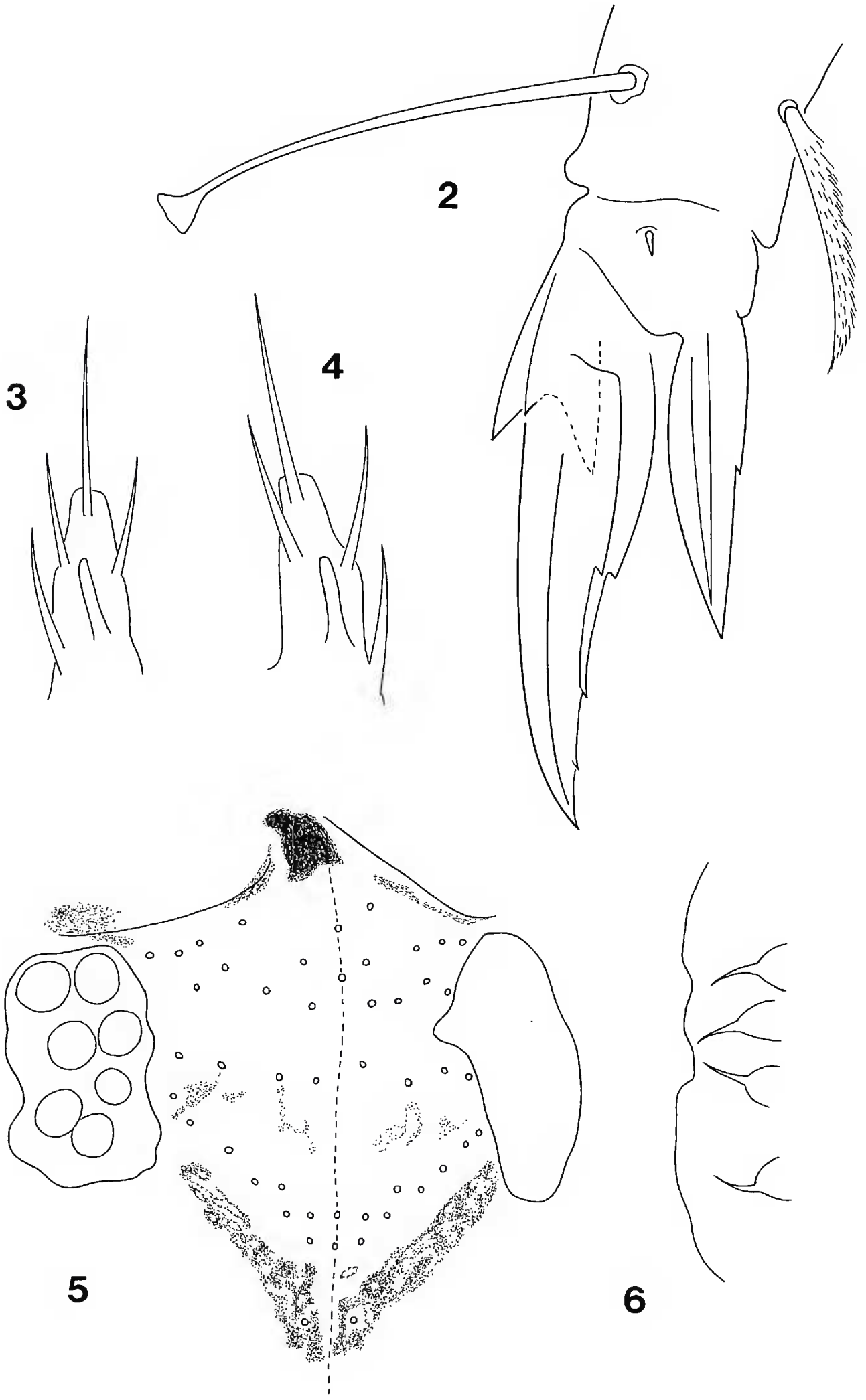
4–7, OA = 1–2, MP = 3 (4 on one side of one specimen), L = 2. Formula for Abd. 3: IA = 3–5, OA = 1, M = 2–4, L = 3. Corpus of tenaculum with 1 smooth seta. Inner margin of unguis with basal pair of teeth and 2 distal unpaired teeth (Fig. 2), outer margin with a small median tooth and 2 large lateral teeth. Unguiculus with a tooth placed near center of an outer lamella. Male genital plate circinate, with about 17 smooth setae arranged in 1 row around periphery of plate. Manubrium and dentes with many ciliated setae and no smooth setae. Mucro with 2 teeth and basal spine.

Diagnosis.—In coloration the new species comes closest to the North American *O. carneiceps* Packard and *O. folsomi* Maynard. The first is almost black except for the pale head (Christiansen and Bellinger, 1980:807) and the second is also dark but both head and mesothorax are yellow (Maynard, 1951:189). In *O. manitobae,* pigment is almost evenly distributed over head and body and is much lighter. The unguicular tooth of *O. manitobae* and *O. carneiceps* is placed near the middle of an outer lamella but in *O. folsomi* the tooth arises distally.

In Stach's 1960 revision of *Orchesella,* the new species keys out to *O. folsomi.* None of Stach's 117 figures illustrating the pigmentation of European species match closely the distribution of pigment of *O. manitobae.*

Comments.—The color pattern described above is based on the three largest specimens. Two small specimens possess very little pigment but it is still evenly distributed.

Head macrochaetotaxy was studied fully in only one specimen, in all others the head is distorted and it is impossible to work out the complete pattern. The macrochaetotaxy of Abd. 2 and Abd. 3 was studied in almost all the specimens



Figures 2–6. *O. manitobae.* 2. Prothoracic claws. 3. Right outer labial papilla with its differentiated seta and accompanying setae, note presence of one basal seta. 4. As preceding, left outer labial papilla. 5. Anterior head macrochaetotaxy. 6. Labral papillae.

and it revealed much variation, which limits the use of this character for separating closely related species. This variation may be due to changes in the number of setae during growth, inherent variability, and the asymmetric distribution of setae which is rather frequent in members of this genus.

Material examined.—All the specimens were collected by J. Aitchison on the surroundings of Fort Whyte, Manitoba, Canada. Below I give the accession number provided by Dr. Christiansen and additional data for each specimen.

Number 5507—holotype (♀), pitfall trap placed on small marshy meadow, 20.I.1982; 5508A—1 ♀, 25.VI.1980, 725 m; 5506—1 ♂, 1 ♀, 20.V.1981; 5511—1 ♀, 15.X.1980, an aspen-bur oak wood litter, 805 m; 5512—1 ♀, 20.VIII.1980, small marshy meadow being invaded by trees, 737 m; 5516—1 ♂, 20.VII.1979, in a meadow.

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